INFORMATION REPORT INFORMATION REPORT

# CENTRAL INTELLIGENCE AGENCY



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| COUNTRY | USSR (Moscow Oblast) | REPORT | |
| SUBJECT | 1. Moscow Welding Technical School and Paton Automatic Welding Method<br>2. Moscow Institute for Civil Engineering and State Institute for City Planning<br>3, Institute of Geological Prospecting i/n S. Ordzhonikidze | DATE DISTR. | 2 November 1959 |
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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

Attachment 1: A report on the Moscow Welding Technical School and the Paton Automatic Welding Method

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The background and curriculum of the school are related only in general terms. A rough sketch of the mechanics of automatic welding under a layer of flux is attached.

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(Note: Washington distribution indicated by "X"; Field distribution by "#".)

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Attachment 2: A report on the Moscow Institute for Civil Engineering and the State Institute for City Planning, Moscow. 50X1-HUM

The report contains limited information regarding the Institute for Civil Engineering. 50X1-HUM

The State Institute for City Planning is reported in somewhat more detail and incidental mention is made of the Institute for Project Types and new construction in the Moscow area.

Attachment 3: A report on the Institute of Geological Prospecting i/n S. Ordzhonikidze 50X1-HUM

Entrance requirements, the course of study offered, and the curriculum for geological engineering are described. 50X1-HUM

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COUNTRY: USSR (Moscow oblast)

REPORT NO:

SUBJECT: Moscow Institute for Civil Engineering and the State Institute for City Planning, Moscow.

DATE OF INFO:

DATE ACQUIRED:

MOSCOW INSTITUTE FOR CIVIL ENGINEERING
AND THE STATE INSTITUTE FOR CITY PLANNING, MOSCOW

1. Moscow Order of the Labor Red Banner Institute for Civil Engineering i/n Kuybyshev (Moskovskiy Inzhenerno-Stroitelnyy Institut imeni Kuybyshev - MISI) (Inzhener gorodskogo stroitelstva i khozyaystva). The Institute was located on Spartakovskaya ulitsa No. 2, Baumanskiy rayon, Moscow, and was subordinate to the Ministry of Higher Education. The faculties of this five-year civil engineering institute included specialization in city planning, construction and communal maintenance; hydrotechnology; industrial construction; water main and sewage construction; heating and ventilation techniques; technology of construction and materials

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State Institute for City Planning

5. The State Institute for City Planning (Gosudarstvennyy institut proyektirovaniya gorodov - GIPROGOR) was located on Pervaya ulitsa Yamskogo polya, rayon unknown, in Moscow. Prior to 1956, this institute was subordinate to GOSSTROY, however from 1956 - 1959 the institute operated under the supervision of the Ministry for Communal Economy. The primary function of the institute was the planning of new cities within the RSFSR.

Organization and Personnel



6. The institute was composed of 12 individual sections - masterskaya. The first and second sections (pervaya y vtoraya masterskaya) employed approximately 100 architects, designing engineers, draftsmen, and technicians who worked on projects and plans for standard series type two to five-story semi-prefabricated dwellings. These two sections were not considered secret and were openly accessible. With the exception of those sections dedicated to the planning of streets, roads, parks, and communal facilities, the remainder of the sections were restricted and could not be entered without a special pass. Personnel of the first and second sections did not have passes for entrance to the other sections of the institute. Liaison between the secret and non-secret sections was maintained by the chiefs of sections.

First Shop - Architecture



7. From 1956 to mid-1957 the First Shop - Architecture (Pervaya Masterskaya - Arkhitektura) was engaged in projecting a standard series type of semi-prefabricated homes which could be constructed in any part of the RSFSR. These homes were primarily designed for new cities under construction in various localities of the USSR and included many types of houses two to five stories high with two to four bedrooms, duplexes and 20-30 unit apartment buildings. one of the specifications of the project orders was the inclusion of material resistance requirements for climate temperatures of minus 20, 30 and 40 degrees centigrade. Each series of housing projects consisted of 12 different types of houses classified in accordance with the above mentioned material resistance category. The completed projects were bound in albums and forwarded to the Institute for

Project Types (Institut Tipovykh Proyektov). the section chiefs or architects were responsible for coordination between the sections of the institute concerned with the completion of a project.

8. The first and second sections also projected clubs, theaters, hospitals, and school houses for new cities. each new city was projected for a population of at least 100,000, as a starting point, and that for the most part they were being built in heavily industrialized areas.

9. During mid-1957 - mid-1958, group of engineers were required to supervise the construction of two seven-story, semi-prefabricated city dwellings in Moscow, and a rest home for young pioneers in an area south of the city. One of the former was located in the center of Moscow, and the other was constructed on one of the Avtozavodskiy area streets. Since projects and plans for these houses were prepared in the First Shop, the engineers and architects of this section periodically supervised the progress of the actual construction. One of supervisors on this project was Grigoriy Petrovich Zhdanov.

10.

11. comments regarding the construction and planning of new housing projects: Semi-prefabricated standard houses were planned for new cities only, whereas fully prefabricated homes were assembled and erected in only the large cities. The cost of projecting, fabricating, and construction of the semi-prefabricated homes was unknown however the cost for construction of a semi-prefabricated unit would amount to about 1000 rubles per square meter. The section which was engaged in budgeting, estimating, and planning the financing of city projects was a secret section called smetnaya gruppa or otdel smet.

Institute for Project Types

12. The location of the Institute for Project Types, Institut tipovykh proyektov, The function of this institute was believed to include the collection of completed projects, the advertising and propagandizing of available projects, and the dissemination of project materials. Thus, when any locality or industrial organization planned to construct a city or workers' settlement, this institute would be in a position to offer any suitable city plan in accordance with the topographical requirements.

New Construction in Moscow

13. In connection with new housing in the Moscow area the Avtozavodskiy district, in the southern part of Moscow, was greatly expanded. Similarily, south of the new Moscow University, a complete new residential section had been constructed consisting of numerous large apartment houses.

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the Sokol-Peschanaya area which underwent a building expansion during the last five-six years. 50X1-HUM

Location of a New City

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14. In 1956 or 1957, during a conference of architects which was held in Moscow, one of the Moscow newspapers reported the proceedings of the conference, that a new city was being built or projected in the Stalingrad area on the Volga. This city named 'Volzheskoye', might have been built prior to 1956. 50X1-HUM

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COUNTRY: USSR (Moscow oblast)

REPORT NO.

SUBJECT: Moscow Welding Technical School and Paton Automatic Welding Method.

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# MOSCOW WELDING TECHNICAL SCHOOL AND PATON AUTOMATIC WELDING METHOD.

1. Moscow Welding Technical School (Moskovskiy Svarochnyy Tekhnikum) the Technical School was subordinate to the Ministry of Chemical Industry, and was located on a side street, name unknown, in the vicinity of Yaroslavskoye shosse, north of Rizheskiy vokzal. After 1951, the Technical School was transferred to an unknown location in another section of Moscow. The Tekhnikum offered a four-year course in welding techniques, upon completion of which the student received a diploma and the title of technician-technologist for welding (tekhnik-tekhnolog po svarochnomu proizvodstvu).





## Curriculum

2. The tekhnikum offered a uniform four-year course for all students. During the first two years of study only day classes were scheduled. The third and fourth year courses were given during evening hours. In general, all forms of welding techniques such as gas, arc, resistance, pressure, spark, and automatic were taught. In addition to welding techniques students specialized in such fields as, mechanics, lathe operation, draftsmanship and blueprint

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reading, factory organization and shop management, and other technical subjects.

Upon completion of this training students were qualified for assignment at any machine construction plant as welding technicians-technologists or welding shop supervisors

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Paton Automatic Welding Method

3. automatic welding method (Avtomaticheskaya Svarka Pod Sloyem Flyusa - automatic welding under a layer of flux). this method could have been the Paton method.

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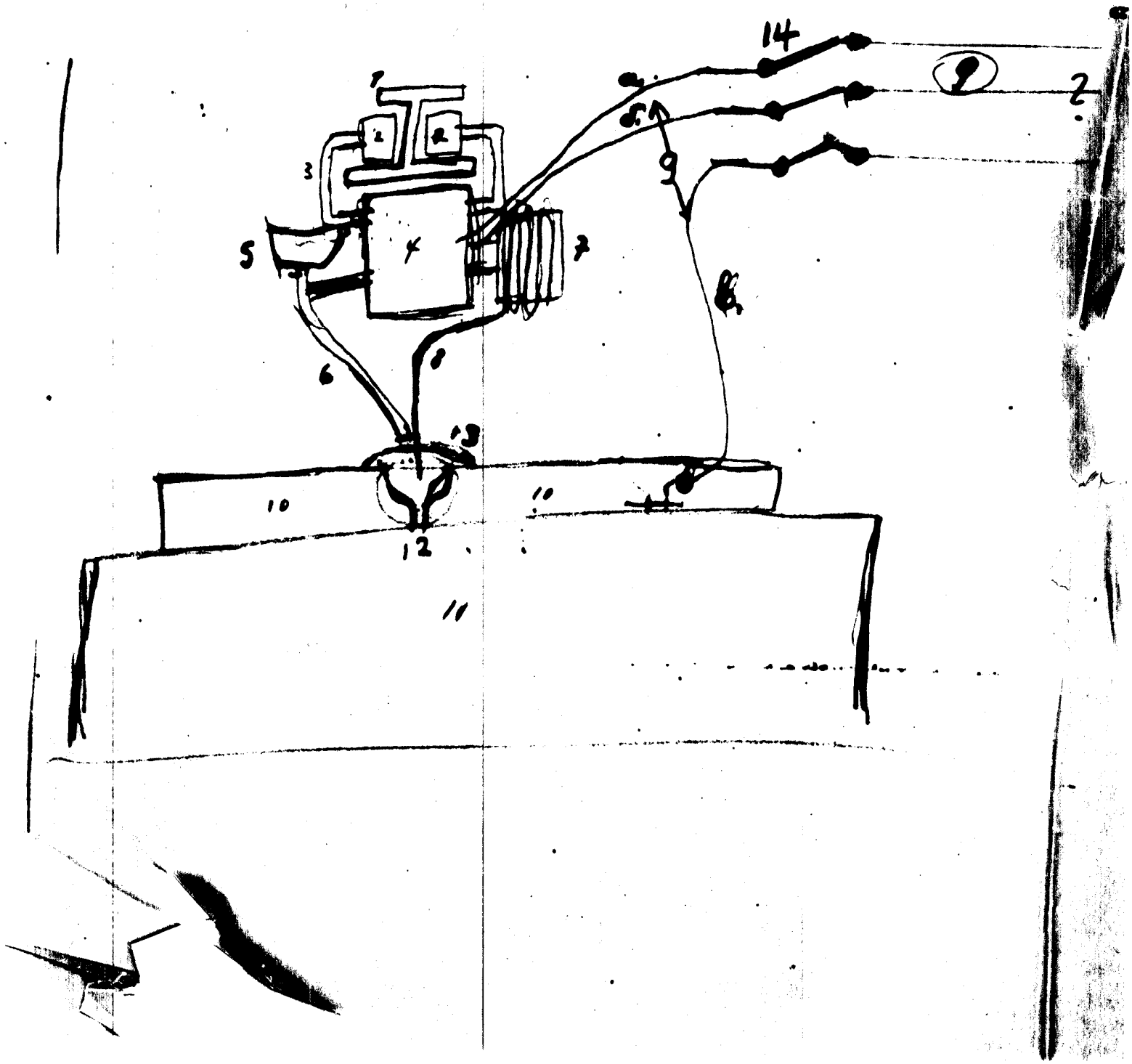
The following legend identifies numerically designated points of automatic welding under flux:

| | | |
|---|---|---|
| 1. | Monorail, steel | Monorels |
| 2. | Rollers | Roliki |
| 3. | Connection supports for (4) | Soyedineniye dlya svarochnogo traktora |
| 4. | Welding tractor (motor, transformer, etc. Exact mechanisms within this tractor was unknown to source) | Svarochnyy traktor |
| 5. | Metal container for flux (powder) Exact position unknown. | Bunker dlya flyusa (poroshok) |
| 6. | Feed pipe for flux | Podvod flyusa |
| 7. | Wire drum, steel | Baraban dlya provoloki, stal |
| 8. | Wire | Provoloka |
| 9. | Three-phase system of current input | 3x faznaya sistema podvoda toka |
| 10. | Part or parts for welding | Detal dlya svarki |
| 11. | Metal table | Stol iz metala |
| 12. | Brim, edge | Kromka, faska |
| 13. | Flux mound | Flyus osedayet |
| 14. | Switches | Rubilniki |

AUTOMATIC WELDING UNDER A LAYER OF FLUX



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## INSTITUTE OF GEOLOGICAL RESEARCH I/N S. ORDZHONIKIDZE, MOSCOW

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**General**

1. the Institute of Geological Research i/n S. Ordzhonikidze, Moscow, This Institute, located on Manezhnaya ulitsa, was subordinate to the Ministry of Culture, and supervised by the Geological Institute of the Academy of Sciences in Moscow. The research conducted by the Institute was related to the Promstroyproyekt. The Institute also supplied and received informative data from the Aerogeological Survey Group (Aerogeologya). Much of the laboratory work required in Institute courses was performed in the laboratory of the University of Moscow.

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**Entrance Requirements**

3. Candidates for enrollment at the Institute were required to have completed the tenth grade of secondary education. These candidates were given an entrance examination composed of questions on the following subjects: geometry, trigonometry, physics, chemistry, Russian literature, and the history of the Communist Party. The Institute accepted 250 students 50X1-HUM annually out of approximately 2,000 applicants. all veterans and nationals were accepted automatically upon 50X1-HUM application. Those student candidates who had had superior scholastic records during their secondary schooling, were exempt from taking the Institute entrance examination.

4. Students were required to provide the following documentation upon enrollment at the Institute: a personal history statement, five photographs, passport, and secondary-school diploma.

**Course of Study**

5. The school year was composed of ten months of academic study and two months vacation during which the classes took field trips. Classes were held five and one-half days a week, from Monday to Saturday noon. Class periods lasted 50 minutes each, with ten-minute breaks between classes. There were usually six class periods scheduled every day, except Saturday. Oral and written examinations were given at various times throughout the courses. Final examinations were given in January and June.

6. 50X1-HUM
Soviet students who had failed courses were not permitted to continue studying at the Institute.

**Curriculum and Instructors**

7. the curriculum for geological engineering as follows: 50X1-HUM

| Course | Duration (No. of Semesters) | Instructor |
|---|---|---|
| **First Year** | | |
| Advanced mathematics | 2 | Ogonezov |
| Descriptive geometry | 1 | Shishkin |
| Mechanical drawing | 2 | Shelkovnikov |

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| Course | Duration | Instructor |
|---|---|---|
| **First Year (continued)** | | |
| Physics | 2 | Spitsyn |
| Chemistry | 2 | Spitsyn |
| General geology | 2 | Belousov |
| Topography | 2 | Zavaritskiy |
| Crystallography | 1 | Yakzhin |
| Mineralogy | 1 | Smolyaninov |
| Marxism and Leninism | 2 (twice a week) | |
| Foreign language - [redacted] students were exempt from this course, but were recommended to study English. [redacted] | | 50X1-HUM 50X1-HUM |
| **Second Year** | | |
| Mathematics | 2 | Ogonezov |
| Qualitative and quantitative analysis | 2 | |
| Physics | 2 | Spitsyn |
| Dynamics | 1 | Nenashev |
| Statics | 1 | Nenashev |
| Mineralogy | 1 | Kalinin |
| Paleontology | 1 | Zolkina |
| Marxism and Leninism | 2 (twice a week) | |
| **Third Year** | | |
| Mechanics (same as second year) | | Nenashev |
| Physics and chemistry | 1 | Spitsyn |
| Strength of materials | 1 | Ogonezov |
| Electrontechnology | 1 | |
| Hydraulics | 1 | |
| Mineralogy | 2 | Betekhtin |
| Paleontology | 2 | Menner |
| Marxism and Leninism | 2 (twice a week) | |
| Petrography - general and microscopic | 1 | Shvetsov |
| Petrography - sedimentary rocks | 1 | Shvetsov |
| Geology of the USSR | 2 | Muratov (Dr. in Geology) |
| **Fourth Year** | | |
| Geophysics | 1 | |
| Hydrology | 1 | Bogomolov |
| Geomorphology | 1 | Nikolayen |
| Petrography - metamorphic rocks | 1 | Dvornikov |
| Petrography - general | 1 | Shvetsov |
| Mining security measures | 1 | |
| Mineral and metallic ores | 1 | Yakzhin |
| Ore research and exploration | 1 | Zavaritskiy |
| Geology of the USSR | 1 | Muratov |
| Military geology | 1 | Pavlov (Army colonel) |
| Geological engineering | 1 | Merenkov, B. YA. |

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| Course | Duration | Instructor |
|---|---|---|
| **Fifth Year** | | |
| Research and Exploration of non-metallic mineral deposits | 1 | Merenkov, B. YA |
| Tectonics | 1 | Mikhanlov |
| Economics | 1 | |
| Universal stage | 1 | Dobrokhotova |
| Genesis of ore bodies (Metalogenia) | 1 | YUshko |

Note: name of Geology Faculty Dean: Profimov.

Field Trips

8. [redacted] various field trips over a period of five years as follows: Date, location and description of field projects: 50X1-HUM

a. June - July 1948. Zagorsk (Moscow oblast). (N 56 19, E 38 03). Surveying exercises, i.e., use of surveying equipment and preparation of a topographical map of the area. Triangulation points had been previously established in this area.

b. July 1949. Backchisaray (in the Crimea). Preparation of a geological map of the area.

c. Rastov (the Ukraine). July 1950. Use of drilling equipment. Location of petroleum and study of earth strata.

d. July 1951. Pavlodar (Central Asis). Geological surveys. Drilled 150 meters to study earth strata.

e. 1952. Kosdemiansk (near Miask, in the Urals). Worked for four months on completion of thesis. [redacted] 50X1-HUM

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[redacted] Geological Engineering

9. Military Geology. This course was the study of underground installations (shelters, hospitals, barracks, etc.). [redacted] students were 50X1-HUM required to submit a completed theoretical project design for an underground military installation which would accommodate approximately 500 men. This installation was to be a reinforced temporary underground fortification with office space, quarters for officers and enlisted men, storage space, and first-aid station. [redacted] 50X1-HUM

[redacted] temporary fortifications were those located in areas where the probability of airborne or infantry troops attack existed. Fortifications adjacent to borders were considered temporary, and were built of logs and sand bags. Reinforced concrete structures, such as air raid shelters, underground hospitals and storage areas, were 50X1-HUM considered permanent fortifications. A military officer named Pavlov, [redacted] was the instructor. Text-books were not allowed to be taken out of the classrooms or library.

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10. Geophysics. The course was classified as secret, [redacted] non-Soviets, was not permitted to take this instruction. The course, which included laboratory work in Zagorsk, was a study of radioactive 50X1-HUM minerals.

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Stipend



11. [redacted] 390 rubles per month from the University, plus 250 rubles from the syndicates, during the first year; and 450 rubles per month, plus the 250 during the second year. For the third year the stipend was of 500 rubles per month, but the amount from the syndicates was reduced. Under a new system established January 1949, students with outstanding grades were granted a 25 percent monthly pay increase.

12. Living quarters were provided free of charge, but not food, books and clothes. Meals, at a special rate for students and faculty, were served in the mess hall.